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GERMAN DELEGATION

COCOM DOC 4130

Paris, September 7, 1960

COORDINATING COMMITTEEMEMORANDUM BY THE GERMAN DELEGATIONON THE EXPORT OF MODULATING BAYS AND RADIO BAYS TO HUNGARY

The German Delegation wish to inform the Committee that their authorities have received an application to deliver

one Hertzian link FM 960- TV/4000  
consisting of 3 modulating bays and  
3 radio bays with 1 antenna  
valued at 59.524, --%  
covered by item 1520

to Hungary. The radio bays have the type number Rel 138 y 1d, the modulating bays Rel 136 y 6c. The system operates with frequency modulation at a radio frequency around 4,000 mc/s (7.5 cm). The capacity of the transmitter amounts, due to the short distance between the Austrian station Anninger and the Hungarian border station Sopron, to only 5 watt. The three radio bays are to be used to telephone and television, i. e. one pair for the transmission of 960 voices, the second pair for television and the third one as reserve for the two other pairs.

The German Delegation would like to give following information on this request: the Austrian PT-administration is building up a new information network with Hertzian links. For the connection with Hungary is needed one Hertzian link on the Hungarian territory, since the stations on both sides of the border must have the same technique. On the Austrian side a branch is provided in the station Anninger to the Hungarian border station Sopron. The equipments needed for the connection with Hungary are purchased in Austria by the Austrian PT-administration, on the Hungarian side by the Hungarian PT-administration. Since the equipment must have the same technique on both sides, either the technique utilized in Austria (German equipment has to be provided) or the technique normally utilized in Hungary (Budavox-equipment has to be installed in Austria), the transfer from Sopron

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to Budapest is provided for by equipments fabricated by Hungary. During the negotiations between the PT-administration of Austria and Hungary, the Hungarian one has agreed to purchase the Hertzian links in Germany. The installation and the opening of the equipment in Hungary will be made by the German firm, this provides further safeguard that the equipment will not be used for other purposes. The servicing of the equipment will for the future as well depend on the producer safeguarding that an misuse of the equipment will be excluded. Particular attention is drawn to the fact that the delivery of the equipment will directly connect the Soviet-Bloc-country Hungary with the Free World communication system.

No technical know-how, unknown to the bloc will be provided by the shipment of the equipment, since the technique used is known by publications in technical reviews.

The technical data of the equipment are given in an annex attached.

The German Delegation present the request as an ad-hoc-case and hope that no objection will be raised. They will be grateful to receive the views of the Committee at an early opportunity.

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CONFIDENTIALANNEX to  
COCOM DOC 4130TECHNICAL DATAA. General data

Radio-frequency range... 3,800 to 4,200 mc/s  
corresponding to wavelengths. 7.9 to 7.1 cm  
Number of available RF channel pairs  
as per frequency allocation  
(Set A or B of equispaced frequencies)...6  
Separation between the transmitting  
and receiving frequencies  
of an RF channel pair ..... 213 mc/s  
System value in transmitting  
a multichannel baseband  
(carrier)..... 145 db (16.7 N)  
a TV baseband ..... 136 db (15.7 N)  
Inside cross section of the  
antenna feeder ..... 58.2 mm x 29.1 mm  
(2 9/32" x 1 5/32")

B. Modulation

Type of modulation.... Frequency modulation

## 1. Carrier baseband

(600 voice channels).... 60 to 2,540 kc/s  
Maximum frequency swing.... approx. +4.5 mc/s  
Mean channel swing.... +280 kc/s  
(200 kc/s RMS)  
Relative input power level per channel:  
Standard value..... -15 db (-1.7 N)  
adjustable between.... -18 and -14 db  
(-2.1 to -1.6 N)

Relative output level

per channel..... -15 +0.5 db  
(-1.7 +0.05 N)

Input and output impedances....  $Z = 75 \Omega$ 

Reflection attenuation

at carrier terminal..... &gt; 20 db

## 2. Television baseband . . . 0.01 to 5,000 kc/s

Maximum frequency swing (peak-to-peak).. 8 mc/s  
Video signal voltage at input:  
Standard value..... 1 v peak-to-peak  
adjustable between . 0.7 and 1.3 v peak-to-peak  
Video signal voltage  
at output.... 1 v peak-to-peak + 0.5 %  
Input and output impedances.....  $Z = 75 \Omega$   
Reflection attenuation  
at television terminal .... > 24 db

## 3. Service channel

(Frequency band) . . . . . 50 to 5,000 c/s  
Input level..... -22.6 db (-2.6 N)  
Output level ..... -14.8 db (-1.7 N)

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C. Transmitter

Transmitting power..... 5 w  
 Frequency instability  
     at +20 C  $\pm$ 20 C .....  $\pm 3 \times 10^{-5}$   
 IF input level ..... 0.3 v  
 Input impedance .....  $Z = 75 \Omega$

D. Receiver

Noise figure .....  $< 14$  db  
 Intermediate frequency ..... 70 mc/s  
 IF bandwidth .....  $\pm 15$  mc/s  
     with a drop at the band edges by approx. 5%  
 IF output level ..... 0.6 v  
 IF output impedance .....  $Z = 75 \Omega$

E. Power supply

Mains voltage ..... 110 or 220 v  
 admissible mains voltage variations:  
     For compliance with the specified  
     performance data .....  $\pm 2\%$   
     Operation still possible with...  $\pm 5\%$   
     temporarily (for approx. 10 sec) ...  $-10\%$   
 Mains frequency ..... 48 to 62 c/s  
 Input power of the radio bay  
     in terminal operation ..... 650 va  
     in repeater operation ..... 550 va  
 Input power of the modulating bay .. 650 va

F. IF switching attachment

Frequency range ..... 55 to 85 mc/s  
 IF voltage at input ..... 0.6 v  
 IF voltage at output ..... 0.6 v  
 Input and output impedances .....  $Z = 75 \Omega$   
 Decoupling  
     of a blocked path:  
     Diversity unit .....  $> 70$  db ( $> 8N$ )  
     Feed-out and feed-in units .  $> 52$  db ( $> 6N$ )  
 Highest switching rate  
     of the diversity unit ..... every 25 ms  
     Level drop with  
     a given input signal ...  $< 1.3$  db ( $< 0.15N$ )  
 Transfer time  
     of the diversity unit ..... 10  $\mu$ s  
 Power input:  
     Diversity unit ..... approx. 25 va  
     Feed-out unit ..... approx. 30 va  
     Feed-in unit ..... approx. 30 va

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